General

Guideline Title

Screening for thoracolumbar spinal injuries in blunt trauma: an Eastern Association for the Surgery of Trauma practice management guideline.

Bibliographic Source(s)

Sixta S, Moore FO, Ditillo MF, Fox AD, Garcia AJ, Holena D, Joseph B, Tyrie L, Cotton B, Eastern Association for the Surgery of Trauma. Screening for thoracolumbar spinal injuries in blunt trauma: an Eastern Association for the Surgery of Trauma practice management guideline. J Trauma Acute Care Surg. 2012 Nov;73(5 Suppl 4):S326-32. [66 references] PubMed

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: Altman DT, Bokhari F, Cheng JS, Como J, Gunter O, Holevar M, Jerome R, Kurek SJ Jr, Lorenzo M, Mejia V, Miglietta M, O'Neill PJ, Rhee P, Sing R, Streib E, Vaslef S. Practice management guidelines for the screening of thoracolumbar spine fracture. Winston-Salem (NC): Eastern Association for the Surgery of Trauma (EAST); 2006 Jul 17. 40 p. [58 references]

Recommendations

Major Recommendations

The levels of recommendation (1-3) and classification of evidence (I-III) are defined at the end of the "Major Recommendations" field.

Level 1

1. When imaging is deemed necessary, multidetector computed tomographic (MDCT) scans with axial collimation should be used to screen for and diagnose, as MDCT scans are superior to plain films in identifying thoracolumbar spine (TLS) fractures.

Level 2

1. Patients with back pain, TLS tenderness on examination, neurologic deficits referable to the TLS, altered mental status, intoxication, distracting injuries, or known or suspected high-energy mechanisms should be screened for TLS injury with MDCT scan.
2. In blunt trauma patients with a known or suspected injury to the cervical spine, or any other region of the spine, thorough evaluation of the entire spine by MDCT scan should be strongly considered owing to a high incidence of spinal injury at multiple levels within this population.
3. Patients without complaints of TLS pain that have normal mental status, as well as normal neurological and physical examinations may be excluded from TLS injury by clinical examination alone, without radiographic imaging, provided that there is no suspicion of high-energy mechanism or intoxication with alcohol or drugs.

Level 3

1. Magnetic resonance imaging (MRI) should be considered in consultation with the spine service for MDCT findings suggestive of neurologic involvement and of gross neurologic deficits.

Definitions:

Classes of Evidence

Class I: Prospective randomized clinical trial.

Class II: Prospective clinical studies or retrospective analyses based on reliable data such as cohort, observational, prevalence, or case-control studies.

Class III: Retrospectively collected data based on database or registry review, case series, or expert opinion.

Levels of Recommendations

Level 1: The recommendation is convincingly justifiable based on the available scientific information alone. This recommendation is usually based on Class I data; however, strong Class II evidence may form the basis for a Level 1 recommendation, especially if the issue does not lend itself to testing in a randomized format. Conversely, low-quality or contradictory Class I data may not be able to support a Level 1 recommendation.

Level 2: The recommendation is reasonably justifiable by available scientific evidence and strongly supported by expert opinion. This recommendation is usually supported by Class II data or a preponderance of Class III evidence.

Level 3: The recommendation is supported by available data but adequate scientific evidence is lacking. This recommendation is generally supported by Class III data. This type of recommendation is useful for educational purposes and in guiding future clinical research.

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Thoracolumbar spinal injuries

Guideline Category

Evaluation

Screening

Clinical Specialty

Critical Care

Emergency Medicine

Internal Medicine

Orthopedic Surgery

Radiology

Intended Users

Advanced Practice Nurses

Nurses

Physician Assistants

Physicians

Guideline Objective(s)

- To provide evidence-based recommendations on the screening for thoracolumbar spinal (TLS) injuries in blunt trauma patients
- To revise and expand on the Eastern Association for the Surgery of Trauma (EAST) 2006 recommendations
- To answer the relevant questions regarding screening of the acute blunt trauma patient for TLS injuries:
  - What is the appropriate imaging modality to screen patients for TLS injuries?
  - Which trauma patients require radiographic screening for TLS injuries?
  - Does a patient who is awake and alert without distracting injuries require radiologic workup to rule out TLS injuries?

Target Population

Patients with thoracolumbar spinal injuries in blunt trauma

Interventions and Practices Considered

1. Multidetector computed tomographic scans (MDCT)
2. Clinical examination alone
3. Magnetic resonance imaging (MRI)
4. Spine service consultation

Major Outcomes Considered

Sensitivity and specificity of multidetector computed tomographic (MDCT) scans

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

A search of the National Library of Medicine and the National Institutes of Health database and MEDLINE was performed using PubMed (www.pubmed.gov). The search identified articles in the English language that addressed the screening or identification of thoracolumbar spinal (TLS) injury from March 2005 to December 2011. Articles that were categorized as review articles, letters to the editor, editorials, commentaries, and case reports were excluded from the query. Thirty-seven articles were distributed to the committee. Twelve of those articles were thought to be pertinent to the construction of the updated guidelines. An additional nine articles referenced in the previous Practice

Management Guideline (PMG) were referenced to revise and validate the updated guidelines.

Number of Source Documents

21 references

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Class I: Prospective randomized clinical trial (no class I data exist)

Class II: Prospective clinical studies or retrospective analyses based on reliable data such as cohort, observational, prevalence, or case-control studies (14 references)

Class III: Retrospectively collected data based on database or registry review, case series, or expert opinion (7 references)

Methods Used to Analyze the Evidence

Systematic Review with Evidence Tables

Description of the Methods Used to Analyze the Evidence

An evidentiary table was constructed using the 21 references that were identified. The evidentiary table is available online at http://links.lww.com/TA/A201 . Articles were classified in accordance with the Eastern Association for the Surgery of Trauma (EAST) primer on evidence-based medicine that was published in 2000 (see the "Availability of Companion Documents" field). Articles were categorized as Class I, II, or III.

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

Recommendations were then classified as Level 1, 2, or 3 according to definitions as defined by the Eastern Association for the Surgery of Trauma (EAST) primer on evidence-based medicine (see the "Rating Scheme for the Strength of the Recommendations" field).

Rating Scheme for the Strength of the Recommendations

Level 1: The recommendation is convincingly justifiable based on the available scientific information alone. This recommendation is usually based on Class I data; however, strong Class II evidence may form the basis for a Level 1 recommendation, especially if the issue does not lend itself to testing in a randomized format. Conversely, low-quality or contradictory Class I data may not be able to support a Level 1 recommendation.

Level 2: The recommendation is reasonably justifiable by available scientific evidence and strongly supported by expert opinion. This recommendation is usually supported by Class II data or a preponderance of Class III evidence.

Level 3: The recommendation is supported by available data but adequate scientific evidence is lacking. This recommendation is generally supported by Class III data. This type of recommendation is useful for educational purposes and in guiding future clinical research.

Cost Analysis

The guideline developer reviewed published cost analyses.

Method of Guideline Validation

Not stated

Description of Method of Guideline Validation

Not applicable

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for each recommendation (see the "Major Recommendations" field).

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Appropriate screening of thoracolumbar spinal (TLS) injuries in blunt trauma patients

Potential Harms

Not stated

Qualifying Statements

Qualifying Statements

- The Practice Management Guidelines (PMGs) for the screening of thoracolumbar spine (TLS) injuries in blunt trauma were established to assist practitioners in the screening, diagnosis, and management of TLS injuries in blunt trauma patients. These are evidence-based guidelines that should be used in accordance with clinical judgment. Individual scenarios, resource availability, and clinical variations may need to be taken into consideration when determining ultimate screening algorithms.
- The Eastern Association for the Surgery of Trauma (EAST) is a multi-disciplinary professional society committed to improving the care of injured patients. The Ad hoc Committee for Practice Management Guideline Development of EAST develops and disseminates evidence-based information to increase the scientific knowledge needed to enhance patient and clinical decision-making, improve health care quality, and promote efficiency in the organization of public and private systems of health care delivery. Unless specifically stated otherwise, the opinions expressed and statements made in this publication reflect the authors' personal observations and do not imply endorsement by nor official policy of EAST.
- "Clinical practice guidelines are systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances."* These guidelines are not fixed protocols that must be followed, but are intended for health care professionals and providers to consider. While they identify and describe generally recommended courses of intervention, they are not presented as a substitute for the advice of a physician or other knowledgeable health care professional or provider. Individual patients may require different treatments from those specified in a given guideline. Guidelines are not entirely inclusive or exclusive of all methods of

reasonable care that can obtain/produce the same results. While guidelines can be written that take into account variations in clinical settings, resources, or common patient characteristics, they cannot address the unique needs of each patient nor the combination of resources available to a particular community or health care professional or provider. Deviations from clinical practice guidelines may be justified by individual circumstances. Thus, guidelines must be applied based on individual patient needs using professional judgment.

*Institute of Medicine. Clinical practice guidelines: directions for a new program. MJ Field and KN Lohr (eds) Washington, DC: National Academy Press. 1990: pg 39.

Implementation of the Guideline

Description of Implementation Strategy

An implementation strategy was not provided.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

IOM Domain

Effectiveness

Identifying Information and Availability

Bibliographic Source(s)

Sixta S, Moore FO, Ditillo MF, Fox AD, Garcia AJ, Holena D, Joseph B, Tyrie L, Cotton B, Eastern Association for the Surgery of Trauma. Screening for thoracolumbar spinal injuries in blunt trauma: an Eastern Association for the Surgery of Trauma practice management guideline. J Trauma Acute Care Surg. 2012 Nov;73(5 Suppl 4):S326-32. [66 references] PubMed

Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2006 Jul (revised 2012 Nov)

Guideline Developer(s)

Eastern Association for the Surgery of Trauma - Professional Association

Source(s) of Funding

Eastern Association for the Surgery of Trauma (EAST)

Guideline Committee

EAST Practice Management Guidelines Committee

Composition of Group That Authored the Guideline

Authors: Sherry Sixta, MD; Forrest O. Moore, MD; Michael F. Ditillo, DO; Adam D. Fox, DO; Alejandro J. Garcia, MD; Daniel Holena, MD; Bellal Joseph, MD; Leslie Tyrie, MD; Bryan Cotton, MD, MPH

Financial Disclosures/Conflicts of Interest

The authors declare no conflicts of interest.

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: Altman DT, Bokhari F, Cheng JS, Como J, Gunter O, Holevar M, Jerome R, Kurek SJ Jr, Lorenzo M, Mejia V, Miglietta M, O'Neill PJ, Rhee P, Sing R, Streib E, Vaslef S. Practice management guidelines for the screening of thoracolumbar spine fracture. Winston-Salem (NC): Eastern Association for the Surgery of Trauma (EAST); 2006 Jul 17. 40 p. [58 references]

Guideline Availability

Electronic copies: Available in Portable Document Format (PDF) from the Eastern Association for the Surgery of Trauma (EAST) Web site .

Print copies: Available from the Eastern Association for the Surgery of Trauma Guidelines, c/o Sherry Sixta, MD, Cooper University Hospital, Camden, NJ; email: Sixta-Sherry@CooperHealth.edu.

Availability of Companion Documents

The following is available:

- Utilizing evidence based outcome measures to develop practice management guidelines: a primer. 18 p. 2000. Available in Portable Document Format (PDF) from the EAST Web site .

Patient Resources

None available

NGC Status

This NGC summary was completed by ECRI Institute on May 16, 2013.

Copyright Statement

Disclaimer

NGC Disclaimer

The National Guideline Clearinghouseâ„¢ (NGC) does not develop, produce, approve, or endorse the guidelines represented on this site.

All guidelines summarized by NGC and hosted on our site are produced under the auspices of medical specialty societies, relevant professional associations, public or private organizations, other government agencies, health care organizations or plans, and similar entities.

Guidelines represented on the NGC Web site are submitted by guideline developers, and are screened solely to determine that they meet the NGC Inclusion Criteria which may be found at http://www.guideline.gov/about/inclusion-criteria.aspx.

NGC, AHRQ, and its contractor ECRI Institute make no warranties concerning the content or clinical efficacy or effectiveness of the clinical practice guidelines and related materials represented on this site. Moreover, the views and opinions of developers or authors of guidelines represented on this site do not necessarily state or reflect those of NGC, AHRQ, or its contractor ECRI Institute, and inclusion or hosting of guidelines in NGC may not be used for advertising or commercial endorsement purposes.

Readers with questions regarding guideline content are directed to contact the guideline developer.